UNITED STATES PATENT AND TRADEMARK OFFICE

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>01 September 2009</u>.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-40</u> is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) <u>29</u> is/are allowed.
6) ☒ Claim(s) <u>1,4-7,10-17,22,24-27 and 30-40</u> is/are rejected.
7) ☒ Claim(s) <u>2,3,8,9,18-21,23 and 28</u> is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a) ☐ All   b) ☐ Some * c) ☐ None of:
        1. ☐ Certified copies of the priority documents have been received.
        2. ☐ Certified copies of the priority documents have been received in Application No. _____.
        3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____ .

DETAILED ACTION

1.   This Action is in response to the Amendment for Application Number 10/634,062

received on 9/01/2009.

2.   Claims 1-40 are presented for examination.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3.   Claims 4-7, 10-16, 22, 24-27, 31-33, 35-37, 39-40 are rejected under 35 U.S.C.

112, first paragraph, as failing to comply with the enablement requirement. The claim(s)

contains subject matter which was not described in the specification in such a way as to

enable one skilled in the art to which it pertains, or with which it is most nearly

connected, to make and/or use the invention.

For the following rejection(s), reference will be made to the Request to Invoke

Interference, where Applicant maps the claim limitations to portions of Applicant's

provisional application 60/098,296.

4.   Claims 4-5 recite limitations regarding the receipt of a code associated with the

packet in which the code indicates that the data portion is either reassembleable or not

reassembleable. The mapped portions in the provisional do not provide the proper

support for this subject matter. The portions do not disclose any actual "receipt" of a

code nor do they disclose any indication as to whether the data is reassembleable or

not. Summarizing a header's type into a single status word does not appear to equate

to receiving a code that indicates that the data packet is reassembleable or not.

Indicating that the header specifies a fast-path connection does not appear to specify if

the data is reassemblable or not. The portions mapped also do not specify the type of

data storage area to be a re-assembly data storage area or a non-re-assembly data

storage area. The portions merely indicate small and large buffers and has nothing to

do with whether they are re-assembly or non-re-assembly data storage areas.

5.   Regarding claim 6, the claim requires receiving a code *with* the first packet, the

code indicting that the first packet does not contain a data portion. The mapped

portions do not appear to disclose this subject matter. A field in a header buffer does

not equate to the actual receipt of a code with the packet. The rest of the portions

mapped discuss the general examining of a frame header to generate an event from it

and has no relevance to whether a code received with the packet indicates that the

packet does not contain a data portion.

6.   Regarding claim 7, the claim requires receiving a code *with* the second packet

that indicates that the packet is smaller than said predetermined size. It appears from

Applicant's mappings that there is no code provided and the relied upon "length" is

simply determined based on the data of the packet that it holds.

7.   Regarding claim 10, the claim requires that association of a code with the packet

to indicate whether the data portion of the packet is re-assembleable with a data portion

of another packet in said communication flow. The mapped portions only describe the

categorization of a packet to a CCB, but nothing regarding whether the data of the

packet is reasembleable with the data from another packet. Also regarding claim 10,

the claim requires the receipt of a set of descriptors from the host, wherein the

aggregate size of the descriptors approximates a cache line size of the host computer.

The mapped portions do not specify the receipt of descriptors, let alone wherein the

aggregate size of the descriptors approximates a cache line size of the host computer.

Rather the mapped portions relate to the cache line size that can be accommodated,

and it appears the Pmi performs bursts until is has aligned the transfers, which appear

to be the opposite of receiving descriptors that approximates the size. Claim 10 also

recites a re-assembly storage area. The portions mapped also do not specify the type of

data storage area to be a re-assembly data storage.

8.   Claims 11-12 recites a re-assembly storage area. The portions mapped do not

specify the type of data storage area to be a re-assembly data storage

9.   Regarding claim 14, the mapped portions do not indicate how said first storage

area identifier is identifiable by an index in said data structure. The mapped portions do

not provide an index. The mapped portions recite adding the data buffer handle and the

data buffer address to a queue, and that two values are extracted each time at

dequeuing, but there doesn't appear to be an index used in order to identify the first

storage area identifier in a data structure.

10.   Regarding claim 15, the claim requires the use of the index to identify said first

storage area for storing a portion of said first packet. The mapped portions do not recite

an index used, but rather just copying the data buffer handle into a header buffer and

returning it to the host.

11.   Regarding claim 16, the claim requires configuring a descriptor to store said index of said first storage area identifier to inform said host computer of the use of the storage area. The mapped portions in the provisional do not provide the proper support for this subject matter. It appears that the mapped portions relate to the INIC maintaining a queue and adding to the queue when the host writes to the header buffer address registers, which appears to not equate to informing the host computer of the use of said first storage area. Rather it appears that the INIC simply keeps track of when the host computer writes to one of the header buffer address registers.

12.   Regarding claim 22, the claim requires the receipt of a virtual connection identifier wherein a communication flow can be identified by the virtual connection identifier. The mapped portions in the provisional do not provide the proper support for this subject matter, as there is no mention of a virtual connection identifier in order to identify the communication flow.

13.   Regarding claim 24, the claim requires the header storage area index to include an index of said header storage area within a collection of storage identifiers. The mapped portions in the provisional do not provide the proper support for this subject matter. The mapped portions simply recite two values, a data buffer handle and a data buffer address, which do not equate to an index within a collection of storage identifiers.

14.   Claim 26 recites an identifier of a location in said re-assembly storage area. The portions mapped do not specify the type of data storage area to be a re-assembly data storage are.

15.   Claim 27, 31, 35-37 include the same issues in the above claims.

Priority

Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged. Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. 119 or 120 as follows:

The later-filed application must be an application for a patent for an invention which is also disclosed in the prior application (the parent or original nonprovisional application or provisional application). The disclosure of the invention in the parent application and in the later-filed application must be sufficient to comply with the requirements of the first paragraph of 35 U.S.C. 112. See *Transco Products, Inc. v. Performance Contracting, Inc.*, 38 F.3d 551, 32 USPQ2d 1077 (Fed. Cir. 1994).

The disclosure of the prior-filed application, Application No. 10/005,536 (or any of the other prior applications for which benefit is claimed under 35 U.S.C. 119 or 120) fails to provide adequate support or enablement in the manner provided by the first paragraph of 35 U.S.C. 112 for one or more claims of this application.

Applicant's prior applications do not provide adequate disclosure for the subject matter pertaining to the "hybrid storage area" or the "re-assembly storage area" as claimed (i.e. all limitations regarding these storage areas as well as the claimed functionality).

MPEP 201.07 recites, "The disclosure presented in the continuation must be the same as that of the original application." It appears that the disclosure for this specification contains subject matter not contained in the prior applications.

Accordingly, claims 4-7, 10-12, 14-16, 22, 24, 26-27, 31, 35-37 are not entitled to the benefit of the prior applications.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

16.   Claim(s) 30 rejected under 35 USC 101 since the claims are directed to non-statutory subject matter. Claim(s) 30 recites a "computer readable storage medium" which appear to cover both transitory and non-transitory embodiments. While Applicant's Specification may or may not provide examples of a medium as claimed, such examples do not explicitly define the term. The United States Patent and Trademark Office (USPTO) is <u>required</u> to give claims their broadest reasonable interpretation consistent with the specification during proceedings before the USPTO. *See In re Zletz*, 893 F.2d 319 (Fed. Cir. 1989) (during patent examination the pending claims must be interpreted as broadly as their terms reasonably allow). The broadest reasonable interpretation of a claim drawn to a medium as claimed typically covers forms of non-transitory tangible media **and** transitory propagating signals *per se* in view of the ordinary and customary meaning of the term, <u>particularly when the specification is silent of an explicit definition</u>. *See* MPEP 2111.01. When the broadest reasonable

interpretation of a claim covers a signal *per se*, the claim **must** be rejected under

35 U.S.C. § 101 as covering non-statutory subject matter. *See In re Nuijten*, 500 F.3d

1346, 1356-57 (Fed. Cir. 2007) (transitory embodiments are not directed to statutory

subject matter) and *Interim Examination Instructions for Evaluating Subject Matter*

Eligibility Under 35 U.S.C. § 101, Aug. 24, 2009; p. 2.

The Examiner suggests that the Applicant add the limitation "non-transitory" to

the medium as recited in the claim(s) in order to properly render the claim(s) in statutory

form in view of their broadest reasonable interpretation in light of the originally filed

specification.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act

of 1999 (AIPA) and the Intellectual Property and High Technology Technical

Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting

directly or indirectly from an international application filed before November 29, 2000.

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior

to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

17.   Claims 4-7, 10-16, 22, 24-27, 31-33, 35-40 are rejected under 35 U.S.C. 102(e)

as being clearly anticipated by Muller et al. (US 6480489).

18.   Claims 1, 30 are rejected under 35 U.S.C. 102(e) as being anticipated by Born

(US 6631484).

19.   Regarding claim 1, Born disclosed a method of storing a portion of a packet in a

host computer memory, comprising:

        receiving a first packet at a communication interface (Born, col. 9, lines 37-39,

Born disclosed monitoring for the presence of packets received by port 26/27);

        receiving a second packet at said communication interface (Born, col. 9, lines 37-

39, Born disclosed monitoring for the presence of packets received by port 26/27);

        storing a header portion of said first packet in a hybrid storage area of a host

computer (Born, Fig. 6, 88, col. 9, lines 39-42, Born disclosed placing the header in a

FIFO);

        if said first packet includes a data portion, storing said data portion in a data

storage area of said host computer (Born, Fig. 6, 91, col. 9, lines 45-46, Born disclosed

if the packet is a large-size packet, placing the data portion in buffer 77,78, or 79); and

        if said second packet is smaller than a predetermined size, storing said second

packet in said hybrid storage area (Born, Fig. 6, 90, col. 9, lines 46-69, Born disclosed if

it is determined that the packet is a small-size packet, the packet's data is placed in the

FIFO).

Claim 30 recites a computer readable storage medium storing instructions that

when executed by a computer cause the computer to perform the method of claim 1.

Born clearly disclosed a medium as claimed (see Figure 2 for example). Therefore,

claim 30 is rejected under the same rationale.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 17, 34, and 38 are rejected under 35 U.S.C. 102(b) as being anticipated

by Thompson (US 5917828).

20.   Regarding claim 17, Thompson disclosed a method of network communication,

the method comprising: providing a computer having a processor and a memory, the

memory including first, second and third storage areas that are accessible by a

communication interface (Fig. 11, memories 1108, 1122, and 1140);

receiving, by the communication interface, a first packet, and storing the first

packet in the first storage area (Thompson, Fig. 11, All packets received are first stored

in cell FIFO 1108);

receiving, by the communication interface, a second packet, storing a header of

the second packet in the first storage area (Thompson, Fig. 11, All packets received are

stored in cell FIFO 1108), and storing data of the second packet in the second storage

area (Thompson, col. 8, lines 27-31, Thompson disclosed data from the received

packets being stored in local memory buffer 1122 in certain conditions); and

receiving, by the communication interface, a third packet, and storing data of the

third packet in the third storage area, the third storage area containing data from a

plurality of packets and corresponding to an application running on the computer, the

third storage area containing no headers (Thompson, col. 8, lines 40-45, Thompson

disclosed the contents of the local memory buffer, which include the payloads of

received packets, to be stored in main memory buffer 1140).

21.   Regarding claim 34, Thompson disclosed the limitations as described in claim

17, including associating the third storage area with a transmission control protocol

(TCP) connection (Thompson, col. 7, lines 46-60).

22.   Regarding claim 38, Thompson disclosed the limitations as described in claim

17, including sending a command from the computer to the communication interface,

the command including an address of the third storage area (Thompson, col. 8, lines

40-50).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

23.   Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Born

(US 6631484) in view of Oprea (US 5870394).

24.   Regarding claim 37, Born disclosed a communication interface configured to

store packets for transfer to a host computer, comprising:

a parser configured to determine whether a packet includes a data portion (Born,

col. 9, lines 35-50, Born disclosed the function of placing a packet's data portion into a

buffer which would require determining that there is a data portion); and

a hybrid storage area (Fig. 6, 88, FIFO) configured to store:

header portions of the plurality of packets (col. 8, lines 55-54); and

one or more packets smaller than a first predetermined size (col. 8 lines

46-50).

Born did not explicitly state having a re-assembly storage area configured to

store data portions of a plurality of packets from a single communication flow.

In an analogous art, Oprea disclosed an apparatus for reassembly of data

packets into messages in which the packets of a flow are stored in a re-assembly

storage area (Fig. 2, 34).

One of ordinary skill in the art would have been motivated to use the reassembly function of Oprea within the teachings of Born since messages are generally made up of more than a single packet and as such, the packets must be reassembled at the receiving end in order to obtain the predictable result of communication to occur properly.

Allowable Subject Matter

Claim 29 allowed.

Claims 2-3, 8-9, 18-21, 28, 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Amendment

Applicant's arguments and amendments filed on 9/01/2009 have been carefully considered but they are not deemed fully persuasive.

Applicant has submitted a Request to Invoke Interference between the present aplication and Muller et al. (US Patent 6,480,489). The request for interference, filed 9/01/2009 has been acknowledged. However examination of this application has not been completed as required by 37 CFR 41.102(a). Consideration of a potential interference is premature. See MPEP 2303.

In regards to the Interference, Examiner notes that an inadvertent typographical error appears on page 30 in the table, indicating that claim 38 is a copied claim. However it appears that claim 37 (not claim 38) should have been included in this table.

As shown in the above 112 1st rejections, Applicant has not provided the proper support for the claims as rejected above, and as such, these claims are still clearly anticipated by Muller.

Applicant argues that Thompson fails to disclose "the third storage area containing no headers" [Response, p23].

Examiner respectfully disagrees.

Examiner relied on Main Memory Buffer 1140 to disclosed the third storage area as claimed. Thompson states, if the VC 1110 is not in state 2, or the local memory buffer 1122 is full, then a main memory buffer 1140 is allocated fro mthe main memory buffer pool (Thompson, col. 8, lines 30-35). Thompson further disclosed that the state of the VC is then updated to 2. Then, while the VC is in state 2, then a DMA is performed to move the entire contents of the local memory buffer 1122 into the main memory buffer 1140 (Thompson, col. 8, lines 42-45).

Since the local memory buffer 1122 only holds the payload portion (Thompson, col. 8, lines 29-31), and only these contents are moved into the main memory buffer 1140, then it is clear that the main memory buffer 1140 only contains the data portion of the frame, and no header portion.

Therefore the rejection is respectfully maintained.

It is the Examiner's position that Applicant has not yet submitted claims drawn to limitations, which define the operation and apparatus of Applicant's disclosed invention in manner, which distinguishes over the prior art.

Failure for Applicant to significantly narrow definition/scope of the claims and supply arguments commensurate in scope with the claims implies the Applicant intends broad interpretation be given to the claims. The Examiner has interpreted the claims with scope parallel to the Applicant in the response and reiterates the need for the Applicant to more clearly and distinctly define the claimed invention.

Conclusion

Examiner's Note: Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. Bret Dennison whose telephone number is (571) 272-3910. The examiner can normally be reached on M-F 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tonia Dollinger can be reached on (571) 272-4170. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/J Bret Dennison/
Primary Examiner, Art Unit 2443